**University of Belgrade
Faculty of Civil Engineering**

The Project:
**Modernizing geodesy education in Western Balkan with focus on competences and learning outcomes - GEOWEB**

**Activity 2.1**

**A geodesy educational database report**

Belgrade, September 1th

Under the WP2, University of Belgrade with other partners and the project coordinator created the database. Expected results of the database was to collect the information about geodesy educational institutions, their study programs offered, number of students and responsible persons including official web address of the institutions included. In cooperation with the partners and project coordinator design of the database was created and filled with the information agreed between the project participants.

The database consists of: 1) geodesy educational institutions, 2) geodesy programs that actually exist in several countries around in the region and 3) basic information about stakeholders. First two are described on this report while the third will be explained in separate report, under the Project activity 5.1. Interesting information was collected by online questionnaire prepared and put at the UB webserver http://osgl.grf.bg.ac.rs/survey/accounts/login/.

**Geodesy educational institutions**

The 15 educational institutions took part and filled the data into the database -three from Serbia, seven from Bosnia and Herzegovina, two from Albania, one from Macedonia, one from Croatia and one from Slovenia. Educational institutions, country, type of study levels and type of institutions referring to their ownership are showed in table 1. All institutions, except one, are public. One is private, but it does not inform any educational activity, so far.

#### The content of the Institution's database includes the next information: 1) name of the higher education institution (HEI), 2) complete address (country, place, zip code and street address), 3) web site of HEI, 4) type of HEI (public/state, private/state, private), 5) contact person (name, position, department/unit, email and telephone).

#### From 15 institutions, 12 of them described their study programs while three had just filled the information about the institution, without detail explanation of geodetic courses. Probable, they have some geodetic courses, but not the whole program, at the moment of the report writing. The [Faculty of Mining, Geology and Civil Engineering](http://osgl.grf.bg.ac.rs/survey/education/institution/get/17/) - University of Tuzla (table 1, place 6) described three BSc study programs but two BSc are of the same name *Geodesy and mine surveying* with different number of students applied. Third BSc study program (*Geodesy*) and both previously mentioned have unclear number of ECTS and should be supervised and corrected. Serbian educational institutions offer study programs at all HEA, except the Master of engineering but this program is going to be prepared in the future at University College (place 2 at table 1). Bosnian institutions have different study contents at various places and under the different study programs. The [Faculty of Civil Engineering, Department of Geodesy](http://osgl.grf.bg.ac.rs/survey/education/institution/get/10/) - University of Sarajevo, has the most complete offer at all three HEA levels. At the Construction engineering Faculty Polytechnic University of Tirana (Albania) there are four study programs two at professional level (BEng and MEng, position 11, table 1) and two at academic level (MSc and PhD). At the [Faculty of Geology and Mine](http://osgl.grf.bg.ac.rs/survey/education/institution/get/23/) there is one BEng professional study program at the area of GIS (BEng, position 12, table 1). Slovenian and Croatian universities described all their study programs while Macedonian described only one master program.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **INSTITUTION** | **Country** | **B.Eng** | **BSc** | **M.Eng** | **MSc** | **Spec.** | **PhD** | **Type of HEI** |
| 1 | [Faculty of Civil Engineering](http://osgl.grf.bg.ac.rs/survey/education/institution/get/4/) | SER |   | 1 |   | 1 |   | 1 | Public |
| 2 | [University College of Professional Studies for Civil Engineering and Geodesy](http://osgl.grf.bg.ac.rs/survey/education/institution/get/8/) | SER | 1 |   |   |   | 1 |   | Public |
| 3 | [Faculty of Technical Sciences, University of Novi Sad](http://osgl.grf.bg.ac.rs/survey/education/institution/get/13/) | SER |   | 1 |   | 1 | 1 | 1 | Public |
| 4 | [GrađevinskiFakultet Sarajevo](http://osgl.grf.bg.ac.rs/survey/education/institution/get/12/) | BiH | Not yet  | Public |
| 5 | [University of Tuzla, Faculty of Natural Sciences and Mathematics](http://osgl.grf.bg.ac.rs/survey/education/institution/get/9/) | BiH |   | 1\* |   |   |   |   | Public |
| 6 | [Faculty of Mining, Geology and Civil Engineering](http://osgl.grf.bg.ac.rs/survey/education/institution/get/17/) | BiH |   | 3 |   |   |   |   | Public |
| 7 | [Center for Geospatial Research Sarajevo (GIS Center)](http://osgl.grf.bg.ac.rs/survey/education/institution/get/18/) | BiH | Not yet  | Private |
| 8 | [Faculty of Science](http://osgl.grf.bg.ac.rs/survey/education/institution/get/14/) | BiH | Not yet | Public |
| 9 | [Faculty of Civil Engineering, Department of Geodesy](http://osgl.grf.bg.ac.rs/survey/education/institution/get/10/) | BiH | 1 |   | 1 |   | 1 | 1 | Public |
| 10 | Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka, Republic of Srpska | BIH |  | 1 |  | 1 |  |  | Public |
| 11 | [CONSTRUCTION ENGINEERING FACULTY, POLYTECHNIC UNIVERSITY OF TIRANA](http://osgl.grf.bg.ac.rs/survey/education/institution/get/11/) | ALB | 1 |   | 1 | 1 |   | 1 | Public |
| 12 | [Faculty of Geology and Mine](http://osgl.grf.bg.ac.rs/survey/education/institution/get/23/) | ALB | 1 |  |  |  |  |  | Public |
| 13 | [Faculty of Civil Engineering](http://osgl.grf.bg.ac.rs/survey/education/institution/get/20/) | MAK |   |   |   | 1 |   |   | Public |
| 14 | [University of Zagreb, Faculty of Geodesy](http://osgl.grf.bg.ac.rs/survey/education/institution/get/19/) | CRO |   | 1 | 1 |   |   | 1 | Public |
| 15 | [University of Ljubljana, Faculty of Civil and Geodetic Engineering](http://osgl.grf.bg.ac.rs/survey/education/institution/get/22/) | SLO |   | 2 |   | 1 |   | 1 | Public |

Table 1: The educational institutions
*Remark: BSc or Bachelor of Science and BEng allows consecutive Master studies, but BEng (or MEng) is rather practical oriented program at universities of applied sciences or colleges which is more applied oriented*

#### Geodesy programs

#### The content of the study program database includes the next information: 1) name of the program, 2) program level (B.Eng; B.Sc; High School Specialization; 3) number of study years; 4) credit system used; 5) total number of credits; ), 6) language of study, 7) number of admitted students in 2015/16, 8) courses included (nine study areas were included into the questionnaire - photogrammetry (1), remote sensing (2), GIS (3), Geoinformatics (4), Land cadastre (5), Land/real economics (6), Land/real estate law (7), Global navigation satellite system (8) Project management (9)) and 9) number of modules at the existed study program. All information collected is presented at the table 2. There are 30 study programs collected from 15 educational institutions from six countries (Serbia, Albania, Bosnia and Herzegovina, Macedonia, Croatia and Slovenia). Some common conclusions should be that all institutions accepted ECTS policy of the student efforts validation. Bachelor degree lasts three or four year, but mostly three. Small number of study programs was offered in English, mainly at the PhD level. There are a few programs that the students can choose different options to study (MSc in Belgrade and MEng in Zagreb). As far as the subject area, Belgrade, Zagreb and Ljubljana offer all above mentioned study areas. GIS, Geoinformatics, GNSS and Land cadaster are more or less implemented in all educational institutions.

#### Conclusion

#### Having in mind the information obtained and the expected project results we can conclude that:1) Database with information about school institutions and their study programs from six regional countries was created and filled, 2) Fifteen educational institutions filled the database from six regional countries, three from partner’s countries and three outside (Macedonia, Croatia and Slovenia), 3) 30 study programs in database were included, and 4) Database was published at the Project website (http://osgl.grf.bg.ac.rs/survey/accounts/login/) and will continue to collect and inform the stakeholders and others who are interesting to see what the geodetic education institutions offer in the region.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | **INSTITUTION** | Study program | Years | ECTS | No. Credits | Language | Students 2015/16 | Courses | Modules |
| 1 | Faculty of Civil engineering - SER   | PhD | 3 | Yes | 180 | ENG+SER | 5 | 3+4+8+9 | 1 |
| 2 | MSc | 2 | Yes | 120 | SER | 60 | 1+2+3+4+5+6+7+8+9 | 3 |
| 3 | BSc | 3 | Yes | 180 | SER | 60 | 1+4+5+8 | 1 |
| 4 | University College of Professional Studies for Civil Engineering and Geodesy - SER  | B.Eng | 3 | Yes | 180 | SER | 130 | 1+2+3+4+5+7+8 | 1 |
| 5 | Spec. | 1 | Yes | 60 | SER | 32 | 1+2+3+4+5+6+7+9 | 1 |
| 6 | Faculty of Technical Sciences, University of Novi Sad - SER   | BSc | 4 | Yes | 240 | ENG+SER | 74 | 1+2+3+4+5+8+9 | 1 |
| 7 | MSc | 1 | Yes | 60 | ENG+SER | 50 | 1+2+3+4+5+8+9 | 1 |
| 8 | PhD | 3 | Yes | 180 | ENG+SER | 5 | 1+2+3+4+5+8+9 | 1 |
| 9 | Spec. | 5? | Yes | 90? | ENG+SER | 3 | 1+2+3+4+5+8+9 | 1 |
| 10 | Faculty of Civil Engineering, Department of Geodesy - BIH   | B.Eng | 3 | Yes | 180 | BOS | 200 | 1+3+4+5+8 | 1 |
| 11 | M.Eng | 2 | Yes | 120 | BOS | 100 | 1+2+3+4+8 | 1 |
| 12 | PhD | 3 | Yes | 180 | BOS | 5 | 2+4+5+8 | 1 |
| 13 | University of Tuzla, Faculty of Natural Sciences and Mathematics/Geography - BIH | BSc | 4 | Yes | 240 | BOS | 50 | 3 | 1 |
| 14 | Faculty of Mining, Geology and Civil Engineering/Geodesy and Mine Surveying + Geodesy - BIH | BSc | 1? | Yes | 5? | BOS | 54 | 1+4+5 | 1 |
| 15 | BSc | 1? | Yes | 5? | BOS | 99 | 1+4+5 | 1 |
| 16 | CONSTRUCTION ENGINEERING FACULTY, POLYTECHNIC UNIVERSITY OF TIRANA - ALB    | B.Eng | 3 | Yes | 180 | ALB | 55 | 1+2+3+4+5+6+8+9 | 1 |
| 17 | MEng | 2 | Yes | 90 | ALB | 30 | 1+2+3+4+5+6+8+9 | 1 |
| 18 | MSc | 2 | Yes | 120 | ALB | 0 | 1+2+3+4+5+6+8+9 | 1 |
| 19 | PhD | 1 | Yes | 60 | ALB | 0 | 1+2+3+8 | 1 |
| 20 | Faculty of Geology and Mine | B.Eng | 3 | Yes | ? | ALB | 25 | 1+2+3+4 | 1 |
| 21 | Faculty of Civil Engineering - MAC | MSc | 2 | Yes | 120 | MAC | 18 | 3+4+5+6+7+9 | 1 |
| 22 | University of Zagreb, Faculty of Geodesy - CRO   | BSc | 3 | Yes | 180 | CRO | 90 | 1+2+3+4+5+6+7+8+9 | 1 |
| 23 | M.Eng | 2 | Yes | 120 | ENG+CRO | 80 | 1+2+3+4+5+6+7+8+9 | 2 |
| 24 | PhD | 3 | Yes | 180 | ENG+CRO | 1 | 1+2+3+4+5+6+7+8+9 | 1 |
| 25 | University of Ljubljana, Faculty of Civil and Geodetic Engineering - SLO    | BSc | 3 | Yes | 180 | SLO | 30 | 1+2+3+4+5+6+7+8+9 | 1 |
| 26 | BSc | 3 | Yes | 180 | SLO | 30 | 1+2+3+4+5+6+7+8+9 | 1 |
| 27 | MSc | 2 | Yes | 120 | ENG+SLO | 30 | 1+2+3+4+5+6+7+8+9 | 1 |
| 28 | PhD | 3 | Yes | 180 | ENG+SLO | 5 | 1+2+3+4+5+6+7+8 | 1 |
| 29 | Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka -BIH, Republic of Srpska | BSc | 4 | Yes | 240 | SER | 45 | 1+2+3+4+5+6+7+8+9 | 1 |
| 30 | MSc | 1 | Yes | 60 | SER | 23 | 1+3+4+5+8 | 1 |

Table 2: The institutions and basic information about their study programs and courses at the area of geodetic surveying and GIS

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Local coordinator
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